

# EXHIBIT 1

**'449 Patent, Claims 1 and 17**

**1.** A system for autonomous device operating, the system comprising:

one or more processor circuits;

a memory that stores at least a first one or more digital pictures correlated with a first one or more instructions sets for operating a first physical device, wherein the first physical device includes an actuator for moving at least a portion of the first physical device, and wherein at least a portion of the first one or more digital pictures or at least a portion of the first one or more instruction sets for operating the first physical device are learned in a learning process that includes operating the first physical device at least partially by a user;

an optical camera that captures digital pictures;  
and

an artificial intelligence unit that:

receives a new one or more digital pictures from the optical camera;

anticipates the first one or more instruction sets for operating the first physical device based on at least partial match between the new one or more digital pictures and the first one or more digital pictures, wherein the anticipates includes at least one of: determining that a number of at least partially matching portions of the new one or more digital pictures and portions of the first one or more digital pictures exceeds a threshold number, or determining that a percentage of at least partially matching portions of the new one or more digital pictures and portions of the first one or more digital pictures exceeds a threshold percentage; and

causes the one or more processor circuits to execute the first one or more instruction sets for operating the first physical device, wherein the causes is performed in response to the anticipates of the artificial intelligence unit, and wherein the first physical device or a second physical device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first physical device.

**17.** A method comprising:

(a) accessing a memory that stores at least a first one or more digital pictures correlated with a first one or more instructions sets for operating a first physical device, wherein the first physical device includes an actuator for moving at least a portion of the first physical device, and wherein at least a portion of the first one or more digital pictures or at least a portion of the first one or more instruction sets for operating the first physical device are learned in a learning process that includes operating the first physical device at least partially by a user, the accessing of (a) performed by one or more processor circuits;

(b) receiving a new one or more digital pictures from an optical camera, the receiving of (b) performed by the one or more processor circuits;

(c) anticipating the first one or more instruction sets for operating the first physical device based on at least partial match between the new one or more digital pictures and the first one or more digital pictures, wherein the anticipating of (c) includes at least one of: determining that a number of at least partially matching portions of the new one or more digital pictures and portions of the first one or more digital pictures exceeds a threshold number, or determining that a percentage of at least partially matching portions of the new one or more digital pictures and portions of the first one or more digital pictures exceeds a threshold percentage, the anticipating of (c) performed by the one or more processor circuits;

(d) executing the first one or more instruction sets for operating the first physical device, the executing of (d) performed by the one or more processor circuits or by another one or more processor circuits in response to the anticipating of (c); and (e) autonomously performing, by the first physical device or by a second physical device, one or more operations defined by the first one or more instructions ets for operating the first physical device.

**'974 Patent, Claims 1, 14, and 18**

1. A method implemented using a computing system that includes one or more processor circuits, the method comprising:

accessing a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and

at least in response to the anticipating, executing the first one or more instruction sets for operating the first device learned in the learning process, wherein the first device or the second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process.

14. The method of claim 1, wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the second circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the third circumstance representation includes: one or more

object representations, or one or more collections of object representations.

18. One or more non-transitory machine readable media storing machine readable code that when executed by one or more processor circuits causes the one or more processor circuits to perform at least:

accessing a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and

at least in response to the anticipating, causing the first device or the second device to perform one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process at least by causing the one or more processor circuits or another one or more processor circuits to execute the first one or more instruction sets for operating the first device learned in the learning process.

**'344 Patent, Claims 1 and 3**

**1. A system comprising:**

one or more processors configured to perform at least:

accessing a memory that stores at least a knowledgebase that includes a first circumstance representation correlated with a first one or more instruction sets for operating a first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device, and wherein at least a portion of the first circumstance representation or at least a portion of the first one or more instruction sets for operating the first device is learned in a learning process that includes operating the first device at least partially by a user;

generating or receiving a second circumstance representation, wherein the second circumstance representation represents a second circumstance detected at least in part by: the one or more sensors of the first device, or one or more sensors of a second device;

anticipating the first one or more instruction sets for operating the first device based on at least partial match between the second circumstance representation and the first circumstance representation; and

at least in response to the anticipating, executing the first one or more instruction sets for operating the first device, wherein the first device or the second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device.

**3.** The system of claim 1, wherein the first circumstance representation includes a first one or more object representations, and wherein the second circumstance representation includes a second one or more object representations.

**'583 Patent, Claims 1 and 4**

**1. A system comprising:**

one or more processors; and

one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

receiving or generating a first one or more digital pictures, wherein the first one or more digital pictures depict at least a portion of a first device's surrounding;

receiving or generating a first one or more instruction sets for operating the first device; and

learning the first one or more digital pictures correlated with the first one or more instruction sets for operating the first device.

**4. The system of claim 1, wherein the machine readable code, when executed by the one or more processors, causes the one or more processors to further perform at least:**

receiving or generating a new one or more digital pictures;

determining the first one or more instruction sets for operating the first device based on at least partial match between the new one or more digital pictures and the first one or more digital pictures; and

at least in response to the determining, causing the first device or a second device to perform one or more operations defined by the first one or more instruction sets for operating the first device.

**'134 Patent, Claim 1**

1. A system comprising:

one or more processors configured to perform at least:

accessing a memory that stores at least a knowledgebase that includes a first circumstance representation correlated with a first one or more instruction sets for operating a first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device, and wherein at least a portion of the first circumstance representation or at least a portion of the first one or more instruction sets for operating the first device is learned in a learning process that includes operating the first device at least partially by a user;

generating or receiving a second circumstance representation, wherein the second circumstance representation represents a second circumstance detected at least in part by: the one or more sensors of the first device, or one or more sensors of a second device;

anticipating the first one or more instruction sets for operating the first device based on at least partial match between the second circumstance representation and the first circumstance representation; and

at least in response to the anticipating, executing the first one or more instruction sets for operating the first device, wherein the first device or the second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device.

**'585 Patent, Claim 1**

1. A system comprising:

one or more processors; and

one or more memories that store at least a first one or more digital pictures correlated with a first one or more instruction sets for operating a first object of a first application program, wherein the one or more processors are configured to perform at least:

receiving or generating a new one or more digital pictures that depict at least a portion of a surrounding of: the first object of the first application program, a second object of the first application program, or a first object of a second application program;

determining the first one or more instruction sets for operating the first object of the first application program based on at least partial match between the new one or more digital pictures and the first one or more digital pictures; and

at least in response to the determining, executing the first one or more instruction sets for operating the first object of the first application program, wherein the first object of the first application program, the second object of the first application program, or the first object of the second application program autonomously performs one or more operations defined by the first one or more instruction sets for operating the first object of the first application program.